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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,105	12/11/2001	Thorsten R. Boger	SP01-326	6836
22928	7590	10/14/2003	EXAMINER	
CORNING INCORPORATED			GRIFFIN, WALTER DEAN	
SP-TI-3-1			ART UNIT	
CORNING, NY 14831			PAPER NUMBER	

1764

DATE MAILED: 10/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/015,105

Applicant(s)

BOGER ET AL.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 1-23, 47 and 48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-23, 47, and 48, drawn to a catalytic reforming system/reactor, classified in class 422, subclass 211.
- II. Claims 24-46, drawn to a process for catalytic reforming of naphtha, classified in class 208, subclass 134.

The inventions are distinct, each from the other because of the following reasons:

Inventions of Group II and Group I are related as process and apparatus for its practice.

The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the process as claimed can be practiced by another materially different apparatus such as a reactor that contains a fixed bed of particulate catalyst.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Kees van der Sterre on September 25, 2003, a provisional election was made with traverse to prosecute the invention of Group II, claims 24-46. Affirmation of this election must be made by applicant in replying to this Office action. Claims

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1-23, 47, and 48 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 24, 25, 34, 36, and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. (US 4,862,836).

The Chen reference discloses a process for catalytically reforming a fuel to upgrade the octane number of the fuel. The fuel may be gasoline with this type of fuel necessarily comprising naphtha. The process comprises passing the fuel through a reactor that contains a monolithic catalyst. The arrangement of channels in the monolithic catalyst is referred to as “honeycomb”. The catalyst also contains a metal such as platinum. Alumina may also be present in the catalyst. Based on Figure 1, the flow path is substantially axial. Also, uniform catalyst geometry is

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indicated. The reactor also contains a heat exchanger surface to heat the fuel. See column 2, lines 44-68; column 3, lines 1-11 and 34-46; column 8, lines 1-18; and column 11, lines 24-59.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 26-32, 37, and 39-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 4,862,836).

The Chen reference discloses a process for catalytically reforming a fuel to upgrade the octane number of the fuel. The fuel may be gasoline with this type of fuel necessarily comprising

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naphtha. The process comprises passing the fuel through a reactor that contains a monolithic catalyst. The arrangement of channels in the monolithic catalyst is referred to as "honeycomb". The catalyst also contains a metal such as platinum. Alumina may also be present in the catalyst. Based on Figure 1, the flow path is substantially axial. The reactor also contains a heat exchanger surface to heat the fuel. See column 2, lines 44-68; column 3, lines 1-11 and 34-46; column 8, lines 1-18; and column 11, lines 24-59.

The Chen reference does not disclose the claimed geometry variations of the catalyst along the flow path, does not disclose that the composition of the catalyst varies along the flow path, does not disclose the use of gamma alumina, does not disclose the catalyst characteristics of claim 37, and does not disclose the use of a plurality of reactors with the claimed associated catalyst characteristics for each reactor.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Chen by utilizing catalysts of any geometry including that which is claimed because a successful process would be expected as long as the fuel sufficiently contacts the catalyst regardless of the catalyst geometry.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Chen by utilizing a catalyst with a varying composition because, as long as the catalyst contains the disclosed components, variations in these components within the disclosed limits would be expected to produce an effective catalyst.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Chen by utilizing gamma alumina in the

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catalyst because Chen discloses the use of alumina. Therefore, any type of alumina would be expected to be effective in the catalyst.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Chen by utilizing a catalyst that has the characteristics of claim 37 because any catalyst that permits effective contact of the fuel with the catalyst would be expected to be effective in the process.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Chen by utilizing a plurality of reactors because further upgrading of the fuel would be expected. Regarding the associated catalyst characteristics for each reactor, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized any monolithic catalysts that permit effective contact of the catalyst with the fuel.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 4,862,836) as applied to claim 32 above, and further in view of Schmidt et al. (US 6,254,807).

As discussed above, the Chen reference does not disclose that the alumina is coated on a ceramic honeycomb material.

The Schmidt reference discloses that monolithic catalysts can be formed by coating the catalyst components including alumina on a ceramic body. See column 5, lines 58-67.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Chen by having the alumina coated on ceramic as suggested by Schmidt because an effective catalyst would be expected to result.

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Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 4,862,836) as applied to claim 24 above, and further in view of Holtermann et al. (US 6,207,042).

As discussed above, the Chen reference does not disclose that the catalyst comprises chloride.

The Holtermann reference discloses reforming catalysts that contain halides such as chlorides. See column 6, lines 1-56.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Chen by including chloride in the catalyst as suggested by Holtermann because fouling rate and cycle length will be improved.

Conclusion

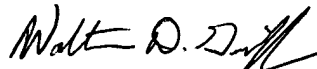
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Degnan reference discloses a reforming process that utilizes a monolithic catalyst.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



Walter D. Griffin
Primary Examiner
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WG
September 29, 2003